



M 27392

Reg. No. :

Name :

II Semester M.A./M.Sc./M.Com. Degree (Reg./Sup./Imp.)

Examination, March 2015

(2014 Admn. Onwards)

BOTANY

BOT 2C07 : Genetics, Evolution and Biometrics

Time : 3 Hours

Max. Marks : 60

Instruction : Draw diagrams wherever necessary.

I. Answer **any two** of the following :

(2×8=16)

1) Explain the mechanism of DNA replication in an eukaryotic cell.

OR

2) Describe the structure and functions of different types of RNA.

3) Write an account of molecular tools in phylogeny.

OR

4) Explain the chi-square test and its significance.

II. Answer **any two** of the following :

(2×6=12)

5) Write an account on the control of gene expression at transcriptional level.

6) Explain the role of polyploidy in evolution.

7) Describe the sampling theories and methods.

III. Answer **any six** of the following :

(6×3=18)

8) Explain the experimental evidence for semiconservative replication.

9) Write an account of the mechanism of DNA damage.

10) Discuss one gene one polypeptide concept.

11) Write an account of site directed mutagenesis.

12) Explain the role of selection in genetic equilibrium.

13) Write an account of classification and origin of new genes.



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- 14) Explain the analysis of variance.
- 15) Write an account of Poisson distribution.

IV. Answer **any seven** of the following :

(7x2=14)

- 16) Aminoacyl t-RNA synthetase
- 17) Concept of colinearity
- 18) Transposition
- 19) Polyadenylation of mRNA
- 20) Exons
- 21) Euthenics
- 22) Divergence
- 23) Arithmetic mode
- 24) Mean deviation
- 25) Dispersion.

Time : 3 Hours

Instruction : Draw diagrams wherever necessary.

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- 1) Explain the mechanism of DNA replication in an eukaryotic cell.
- OR
- 2) Describe the structure and functions of different types of RNA.
- 3) Write an account of molecular tools in phylogeny.

OR

4) Explain the chi-square test and its significance.

ii. Answer any two of the following :

- 5) Write an account on the control of gene expression at transcriptional level.
- 6) Explain the role of polyploidy in evolution.
- 7) Describe the sampling theories and methods.

iii. Answer any six of the following :

- 8) Explain the experimental evidence for semiconservative replication.
- 9) Write an account of the mechanism of DNA damage.
- 10) Discuss one gene one polypeptide concept.
- 11) Write an account of site directed mutagenesis.
- 12) Explain the role of selection in genetic equilibrium.
- 13) Write an account of classification and origin of new genes.